REMARKS

It is asserted that claims 43–44, 48, 54–57, 61 and 67–68 are not new over European Patent No. 0926853 to Aksyuk; the applicants respectfully disagree. Aksyuk concerns an optical add/drop multiplexer (1a) for dropping and adding selected wavelength channels from, and to, WDM radiation (270) being transmitted along a single optical path (fiber 202 to fiber 212). The add/drop multiplexer of Aksyuk could be used as the switchable waveband selective diverting means of the present invention (i.e., channel control unit CCU 250, 360 of Fig. 2) for selecting and diverting at least one component of radiation from the first optical path. Contrary to the Examiner's assertion, however, this reference does not teach "switchable" waveband selective attenuating means upstream of the entry point in the second path for selectively blocking component/s having the same selected waveband (wavelength channel).

Applying the Examiner's interpretation that first and second optical paths comprise fibers 202 and 212 respectively, then the only components that are switchable and capable of selectively diverting at least one component of radiation from the first path to the second path are the optical switches S_1 to S_N. The WGR 240 is not switchable since it always separates WDM radiation to pass along a respective path on the basis of its wavelength. It cannot be said therefore to be switchable and capable of selecting and diverting as required by amended claims 43 and 56. Moreover the optical switches S_1 to S_N are operable to either allow radiation to pass or block and reflect it. When they are operable to pass radiation and thus act as the diverting means, they cannot simultaneously block radiation as required by the switchable waveband selective attenuating means of the present invention.

Accordingly, it is submitted that each of independent claims 43 and 56 is novel over Aksyuk et al. It is further submitted that claims 44, 48, 54, 55, 57, 61 and 67–68 are novel by their dependence on claims 43 and 56 and by virtue of the additional features they recite.

It is asserted that claims 43–44, 48, 54, 56–57, 61 and 67 are not new over U.S. Patent No. 6,590,681 to Egnell; the applicants respectfully disagree. Egnell concerns an add drop node for use in a network in which the nodes are connected by two optical fibers (fibers 7*e* and 7*w* of Fig. 1) which are for respectively carrying optical traffic in opposite directions. For protection the network always has one of the fibers inactive and does not carry optical traffic though it can be made active in the event that the other link is made inactive, for example by occurrence of a fiber break (Col. 2, lines 44–48 and col. 4, lines 16–30, 50 - 63). The node also provides a break in the fiber ring to prevent circulation of signals and their associated problems, ASE re-circulation.

In the embodiment shown in Fig. 5 information carried on the wavelength λ_{re2} is terminated by the node and this wavelength is then re-used (col. 10, lines 21–25). This wavelength is dropped by coupler 17*e* (together with all the other wavelengths since the coupler acts as a power divider) as it travels in an easterly direction along the first optical path (fibers 7*le,* 7*re*). The blocking filter 31e blocks all channels that are to be terminated in the node, i.e., λ_{re2}, and allows all the remaining wavelengths to pass substantially unaffected though they will be at half power due to the effect of coupler 17*e*. The blocking filter 31*e* has a fixed filter characteristic and always blocks the wavelength λ_{re2} that is being terminated in the node (col. 8, lines 24–26 and col. 10, lines 10–20). It is not switchable and cannot selectively divert one or more selected components. This wavelength, depending on the state of switch 43*e,* is either passed to a monitor 45 or terminated by a receiver 11*e* where it is converted back into an electrical signal to complete the transmission span (a transmission span is defined to be the piece of the network between a node transmitting information in a

wavelength band and another node receiving the information on the same wavelength band (col. 3, lines 34–40).

For efficient wavelength utilization the wavelength λ_{re2} is re-used by a transmitter 13e, that is the same wavelength carrier λ_{re2} generated by the transmitter is modulated with new traffic for communication to another node. When the channel λ_{re2} is passed to the monitor 45 the transmitter 13*e* modulates traffic on λ_{re2} which is then passed via switch 33*e* back to the first fiber 7*re* through the coupler 23*e* to by-pass the blocking filter 31*e*. When the switch 43e is in its second position (as shown in Fig. 5) the channel λ_{re2} is terminated by the receiver 11*e* and the wavelength is re-utilized by the transmitter 13*e* and this new modulated optical carrier is passed via the switch 33*e* and coupler 23*w* to the second optical fiber 7*lw*. The re-use of a given wavelength allows the same wavelength to be used to define more than one transmission spans within the network.

Accordingly, it is submitted that the present invention as defined by amended claims 43 and 56 is novel over Egnell since Egnell does not teach i) switchable waveband selective diverting means for selecting and diverting at least one component of radiation (blocking filter 31*e* is not switchable and blocks a fixed wavelength that is being terminated in the node), ii) switchable waveband selective attenuating means ... for selectively blocking said at least one component corresponding to said selected waveband (blocking filter 31*w* is not switchable and blocks a fixed wavelength that is being terminated in the node) and most importantly iii) switchable waveband selective diverting means for ... diverting ... one component ... from the first path to ... the second path (the diverted component λ_{re2} is either diverted to monitor 45 or is terminated by receiver 11*e* and a new modulated carrier generated by the transmitter 13*e* (no wavelength component is ever passed from the first path to the second path). Moreover it is submitted that claims 44, 48, 54, 55,

57, 61 and 67 are novel by their dependence on claims 43 and 56 and by virtue of the additional features they recite.

It is asserted that claims 43– 44, 48, 54, 56–57, 61 and 67 are not new over U.S. Patent No. 5,903,371 to Arecco; the applicants respectfully disagree. Arecco concerns an optical add/drop unit for a self-healing optical network having two optical fiber rings, i.e., working and protection rings. As is known, in normal operation it is the WDM traffic that is carried around the working ring which is used for communication purposes though the protection ring carries identical WDM traffic which propagates in an opposite direction to that of the working ring. In the event of a fiber break within the working ring being detected, operation switches to the WDM traffic propagating on the protection ring.

Arecco concerns an add/drop unit and how to communicate to the nodes that a failure has occurred. It teaches a first add/drop unit simultaneously transmitting around both the working and protection rings an optical signal that other add/drop units monitor for the presence of. In the event that this optical signal is not received at the second add/drop unit from a given ring, this indicates that a failure has occurred on that ring upstream of the unit and all wavelength channels of the WDM traffic on the protection ring are then used for communication of traffic. Utilizing the protection ring eliminates the need to have an independent communication link between the add/drop units to communicate when a failure occurs.

Referring to Fig. 2, the node comprises a respective optical add/drop unit (OADM) 21, 22 for the main (working) transmission line 5, 8 and secondary (protection) transmission line 9, 12. OADMs 21 and 22 are optical devices adapted to separate the incoming WDM signals on the basis of wavelength and respectively pass signals to respective outputs 25 and 26 for signals having

a wavelength corresponding to a dropping band and pass the remaining signals to outputs 27, 28 for those signals having a wavelength corresponding to the bypass band (col. 5, lines 52–64).

In operation, the wavelength channel within the dropping band for the node from the two rings is routed by the respective wavelength selective coupler 45, 47 to a respective signal presence signaling device 33, 34 which monitors for the presence of the two signals and communicates the presence/absence of the signals to a control unit 51. Under normal working operation of the system, each signal presence signaling device 33, 34 will detect the presence of a respective signal on the main and secondary transmission lines, and the control unit routes the wavelength channel within the dropping band from the device 33 via an optical switch 37 to a line terminal 39 where it is converted into electrical signals for use by a user.

The line terminal 39 also includes a transmitter for generating an optical signal having a wavelength within the dropping band which is being added at the node. The new optical signal is added to both the main and secondary transmission lines by way of the bypass outputs 27, 28 via coupler 40 and a respective wavelength selective coupler 46, 48. When a failure occurs on the main transmission line, the signal presence signaling device 33 will detect the loss of the signal within the dropping band, and the control unit switches the optical switch 37 such that the line terminal 39 terminates the signal within the dropping band received from the secondary line to thereby provide a substantially uninterrupted service to the user.

Fig. 5 shows an add drop unit in which two channels are dropped/added at the node and Fig. 6 a further alternative arrangement for dropping/adding three wavelength channels. Arecco neither teaches nor directs the reader to any mechanism by which a selected channel can be routed from a first path to a second path. In every embodiment the channel/s that is/are dropped (selected by wavelength selective coupler 45, 47, 45', 47', demultiplexing unit 145, 147 in Fig. 6) within the

unit are terminated by the line terminal 39, 39', 39a-39c. Moreover the wavelength selective couplers (demultiplexing unit in Fig. 6) are not switchable as required by the present invention.

Accordingly, it is submitted that the present invention as defined by amended claims 43 and 56 is novel over Arecco since Arecco does not teach i) switchable waveband selective diverting means for selecting and diverting at least one component of radiation (wavelength selective coupler 45 is not switchable and blocks a fixed wavelength that is being terminated in the node from the main ring, i.e., the dropping band), ii) switchable waveband selective attenuating means ... for selectively blocking said at least one component corresponding to said selected waveband (wavelength selective coupler 47 is not switchable and blocks the same fixed wavelength being dropped from the protection ring) and iii) switchable waveband selective diverting means for ... diverting ... one component ... from the first path to ... the second path (the wavelength being dropped is terminated in the line terminal 39 and the selection as to whether this is from the main or secondary rings depends on the position of the optical switch 37. The wavelength being dropped is never passed from the main path to the secondary path). Moreover it is submitted that claims 44, 48, 54, 57, 61 and 67 are novel by their dependence on claims 43 and 56 and by virtue of the additional features they recite.

It is submitted that the objections under 35 §U.S.C. § 103(a) are traversed in view of the above. Moreover, even it the teachings of the references are combined in the way suggested by this Examiner, this will not result in a disclosure of the present invention as defined by claims 43 and 56 in that combining the cited references neither teaches nor directs a reader to a) switchable waveband selective diverting means in the first path, *for selecting and diverting said at least one component of the first radiation corresponding to said selected waveband from the first path to* an entry point in *the second path* and b) switchable waveband selective *attenuating means* in the second

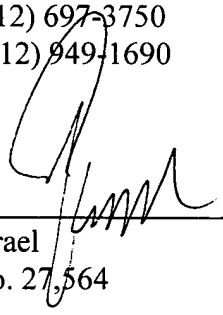
path upstream of the entry point, *for selectively blocking at least one component of the second radiation corresponding to said selected waveband.*

Petition is hereby made for a three-month extension of the period to respond to the outstanding Official Action to January 14, 2005. A check in the amount of $1,020.00, as the Petition fee, is enclosed herewith. If there are any additional charges, or any overpayment, in connection with the filing of the amendment, the Commissioner is hereby authorized to charge any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

KIRSCHSTEIN, OTTINGER, ISRAEL & SCHIFFMILLER, P.C.
Attorneys for Applicant(s)
489 Fifth Avenue
New York, New York 10017-6105
Tel: (212) 697-3750
Fax: (212) 949-1690



Alan Israel
Reg. No. 27,564